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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/835,748	04/10/97	HASHIZUME	T Q45026

MM61/1130
SUGHRUE MION ZINN MACPEAK AND SEAS
2100 PENNSYLVANIA AVENUE NW
WASHINGTON DC 20037-3202

EXAMINER

DICKENS, C

ART UNIT PAPER NUMBER

2853

DATE MAILED: 11/30/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action SummaryApplication No.
08/835,748Applicant(s)
HASHIZUME et al.Examiner
C. DickensGroup Art Unit
2853☐ Responsive to communication(s) filed on _____☐ This action is **FINAL**.☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims☒ Claim(s) 1-12 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.☒ Claim(s) 1-12 is/are rejected.☐ Claim(s) _____ is/are objected to.☐ Claims _____ are subject to restriction or election requirement.**Application Papers**☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.☐ The drawing(s) filed on _____ is/are objected to by the Examiner.☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.☒ The specification is objected to by the Examiner.☐ The oath or declaration is objected to by the Examiner.**Priority under 35 U.S.C. § 119**☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been
☒ received.☐ received in Application No. (Series Code/Serial Number) _____☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).**Attachment(s)**☒ Notice of References Cited, PTO-892☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4, 7☐ Interview Summary, PTO-413☒ Notice of Draftsperson's Patent Drawing Review, PTO-948☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

DETAILED ACTION

This is the first Office Action for serial number 08/835,748, Ink Jet Recording Head, filed April 10, 1997.

Joint Inventors, Common Ownership

1. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Drawings

3. The formal drawing filed on November 24, 1997 have been approved by the Draftsperson.

4. Figure 8 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

5. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "3b" has been used to designate both boundary and upper electrode (see page 10, line 22 of application). Correction is required.

Specification

6. The disclosure is objected to because of the following informalities: on page 8, line 14 "ant" should be --and-- and on page 12, line 19 "Fig. 4" should be --Figs. 4(a) and 4(b)--. Appropriate correction is required.

7. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

Claim Rejections - 35 USC § 112

8. Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is misdescriptive because the elastic sheet alone does not form the pressure chambers. Also, it is unclear how an insulator can be electrical. The recitation "the pressure

chamber" lacks antecedent basis and the use of "via" is improper use of Idiomatic English. Claim 7 suffers these same problems.

In claim 2, it is unclear where the conductor pattern is formed, i.e., opposite or corresponding to the portion wall. The use of "via" is improper use of Idiomatic English and the portion walls are not positively recited. Claim 8 suffers these same problems.

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamuro et al. in view of Okabayashi et al.

Yamamuro et al. discloses an ink-jet recording head (Fig. 25B) comprising: an elastic sheet 16 providing pressure generating chambers 18; nozzle orifices 14; piezoelectric vibrators, formed on the elastic sheet 16, having lower electrode 72; piezoelectric layer 70 formed on the lower electrode 72; upper electrode 82 formed on the piezoelectric layer 70; an

silicon oxide electrical insulator layer 78 covering the upper electrode 82; and conductor pattern 76 connecting with the upper electrode 82; wherein the conductor pattern is formed in a position opposite corresponding to portion walls between the pressure generating chambers and connected to more than one site of the upper electrode 82. Regarding claim 5, it is noted that Yamamuro et al. discloses the use of silicon oxide, silicon nitride or the like as the insulator layer. The specification of the instant application does not give any criticality of the use of polyimide; thus, the teaches of Yamamuro et al. generally covers the use of such material.

However, Yamamuro et al. does not disclose an electrical insulator layer having a window. Okabayashi et al. discloses an electrical insulator layer 11 having an insulating window 9c (Fig. 1) for the purpose of contracting a piezoelectric material to eject ink from a jet nozzle. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an electrical insulator layer having a window in Yamamuro et al. as taught by Okabayashi et al. for the purpose of contracting a piezoelectric material to eject ink from a jet nozzle.


Pertinent Prior Art

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Yamazaki, Lee et al. and Hara et al. all disclose the importance of protecting a piezoelectric material.

Contact Information

12. Any inquiry concerning this or earlier communications from the examiner should be directed to Examiner Dickens whose telephone number is (703) 305-7047. Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-1782. The fax numbers are (703) 305-3431 and (703) 305-3432.


cd/dickens
November 23, 1998


Benjamin R. Fuller
Supervisory Patent Examiner
Technology Center 2800